UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,994	02/25/2004	Akira Fujibayashi	274.43167X00	9782

24956	7590	02/21/2006

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EXAMINER
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ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/784,994	FUJIBAYASHI, AKIRA
	Examiner	Art Unit	
	Patrick M. Moore	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 February 2006</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>12-14 and 26-28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>12-14 and 26-28</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>30 December 2005</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-11 & 15-25 have been cancelled.

2.   Claims 12, 26 & 28 have been amended by Applicant.

3.   Claims 12-14 & 26-28 have been examined.

Response to Amendment

4.   Applicant's amendments filed on 01 February 2006, in response to the Office

Action mailed on 28 November 2005, have been fully considered with the result as

follows.

Drawings

5.   The drawings were received on 30 December 2005. These drawings are

acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 12-14 & 26-28 are rejected under 35 U.S.C. 102(B) as being anticipated

by Padovano (US PG-Pub # 2002/0156984).

a.   As per Claim 12, Padovano discloses a network storage virtualization

method in a network storage system having a plurality of network storage

devices **[Figure 2, # 120]**, said method comprising: allowing a client connected

via a network **[Figure 2, # 116, 200 & 118]** to access the network storage

devices **[Figure 2, # 110-114]** as one virtual network storage system **[¶0018 &**

¶0073]; and permitting said client to access the network storage devices

separate from said virtualized network storage system **[¶0043 & ¶0047]**, wherein

a first network storage device includes a disk interface (I/F) **[Figure 4, # 402]**

which is connected to an apparatus having a function of forming said network

storage devices as one virtual network storage device **[¶0058 & ¶0061]**, and

wherein a second network storage device includes a disk I/F **[Figure 4, # 402]**

which is connected to said apparatus having a function of forming said network

storage devices as one virtual network storage device and a host I/F which is

connectable to an external device **[Figure 4, # 412]** so as to permit said external

device to access the network storage devices separate from said apparatus

having a function of forming said network storage devices as one virtual network

storage device **[¶0105-0107]**, wherein said external device is permitted to access

a secondary volume which is a copy of a primary volume **[¶0074 & ¶0126]** and

not permitted to access volumes other than said secondary volume **[Figure 4, #**

424 & ¶0128], further comprising the step of configuring access control of said

secondary volume from outside of said apparatus having a function of forming

said network storage devices as one virtual network storage device **[¶0105-**

0107], wherein said configuring step comprises the steps of: creating a mirroring

pair between said primary volume and said secondary volume at a certain point

in time by taking a complete initial copy of said primary volume and storing said

complete initial copy in said secondary volume **[Module # 420 in Figure 4,**

further described in ¶0074 & ¶0126]; receiving in said second storage device a

suspend request **[Figure 13, #1304, Figure 27, #2700 & ¶0440-0446]**; placing

the mirroring pair into a suspend status to permit setting of the access control

according to user selection **[Figure 27, #2702-2708 & ¶0440-0444]**; If the user

chooses a read only mode, setting said secondary volume to the read only mode

for input/output (I/O) requests from said external device and re-synchronizing the

mirroring pair **[Figure 12 & ¶0274-0278]**; and if the user chooses a read/write

mode, setting said secondary volume to the read/write mode for input/output (I/O)

requests from said external device and re-synchronizing the mirroring pair

[Figure 12 & ¶0274-0280]. *Examiner understands suspending a mirrored pair to*

enable read only or read/write modes is further disclosed, by Padovano, as a

combination of manual and automatic functionality controlled by the user

interfaces shown in Figures 12 & 13B.

b.   As per Claims 13 & 27, Padovano further discloses a network storage

virtualization method and system according to claims 12 & 26, respectively;

wherein when said secondary volume is set to the read only mode access to said

secondary volume is performed **[Figure 12 & ¶0274-0278]** according to the

steps of: suspending synchronization of the mirroring pair including said primary

volume and said secondary volume **[Figure 27, #2702-2704 & ¶0440-0442]**;

permitting access to data on said secondary volume in response to an I/O

request via the host I/F **[¶0278]**; and upon completion of said access, re-

synchronizing the mirroring pair **[Figure 27, #2710 & ¶0445]**.

c.   As per Claim 14 & 28, Padovano further discloses a network storage

virtualization method and system according to claims 12 & 26, respectively;

wherein when said secondary volume is set to the read/write mode access to

said secondary volume is performed **[Figure 12 & ¶0274-0280]** according to the

steps of: suspending synchronization of the mirroring pair including said primary

volume and said secondary volume **[Figure 27, #2702-2704 & ¶0440-0442]**;

permitting access to data on said secondary volume in response to an I/O

request via the host I/F **[¶0279]**; and upon completion of said access, re-

synchronizing the mirroring pair **[Figure 27, #2710 & ¶0445]**.

d.   As per Claim 26, Padovano discloses a storage system comprising: a first

network storage device which includes a primary volume **[Figure 2, # 110]**; a

second network storage device which includes a secondary volume which is a

copied volume of the primary volume **[Figure 2, # 112]** and volumes other than

the secondary volume **[Figure 2, # 114]**; and a virtualization apparatus, which is

connected to each of said first and second network storage devices **[¶0043 &**

¶0047], and allows a client connected via a network to access the network

storage devices as one virtual network storage system wherein said client is

permitted to access the network storage devices separate from said virtualization

apparatus **[¶0018 & ¶0073]**, wherein said first network storage device includes a

disk interface (I/F) which is connected to virtualization apparatus **[Figure 4, # 402**

& ¶0120], and wherein a second network storage device includes a disk I/F

which is connected to said virtualization apparatus **[Figure 4, # 418 & ¶0125]**

and a host I/F which is connectable to an external device so as to permit said

external device to access the network storage devices separate from said

virtualization apparatus **[Figure 4, # 412]**, wherein said external device is

permitted to access said secondary volume which is a copy of said primary

volume and not permitted to access said volumes other than said secondary

volume **[¶0105-0107]**, wherein access control of said secondary volume is

configured from outside of said virtualization apparatus **[Module # 424 in Figure

4, further described in ¶0076 & ¶0128]**, wherein said access control of said

secondary volume is configured by creating a mirroring pair between said

primary volume and said secondary volume at a certain point in time by taking a

complete initial copy of said primary volume and storing said complete initial copy

in said secondary volume **[Module # 420 in Figure 4, further described in

¶0074 & ¶0126]**, receiving in said second storage device a suspend request

[Figure 13, #1304, Figure 27, #2700 & ¶0440-0446], placing the mirroring pair

into a suspend status to permit setting of the access control according to user

selection **[Figure 27, #2702-2708 & ¶0440-0444]**; if the user chooses a read

only mode, setting said secondary volume to the read only mode for input/output

(I/O) requests from said external device and re-synchronizing the mirroring pair

[Figure 12 & ¶0274-0278]; and if the user chooses a read/write mode, setting

said secondary volume the read/write mode for input/output (I/O) requests from

said external device and re-synchronizing the mirroring pair **[Figure 12 & ¶0274-

0280]**.

Response to Arguments

7.   Applicant's arguments with respect to claims 12-14 & 26-28 have been

considered but are moot in view of the new ground(s) of rejection.

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Patrick M. Moore whose telephone number is (571) 272-

1239. The examiner can normally be reached on M-F 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mano Padmanabahn can be reached on (571) 272-4210. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

PMM

MANO PADMANABHAN
ADVISORY PATENT EXAMINER